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## Wise Ethnical Choice Points out the Only Way through the Survival Bottleneck

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No matter how advanced the scientific technology and how affluent the commercial capital is, the modern human with the selfishness and shortsightedness inherited from the late homo sapiens rapidly blow up its presence through propagation and expansion. The over-exploitation of the nonrenewable resources and damage to the ecological system have led to the extinction of tens of thousands of species as well as the consequence that the human beings themselves are stuck in a predicament, i. e., they are struggling to go through the survival bottleneck.

### 1. Mankind's Survival Bottleneck

Attending the rich material life brought by the science, there was population explosion in the 20th century. In 1900 the world population was 1.2 billion; by 1999 it increased to 6.2 billion. The population is still growing at an unchanged rate such that the current world population almost approaches 7 billion. Actually growth of consumption goes hand in hand with the increase of population.

By “ecological footprint”, scientists measure the productive land and shallow sea occupied for human survival. A research report on the ecological footprint in 52 countries and regions in 2000 reveals that 17 countries and regions including Australia and Brazil boast surplus ecological footprint whereas the other 35 countries and regions such as the United States and Singapore show the deficit in this respect. The statistics that in 1993 the per capita footprint deficit throughout the world was 0.7 and in 1999 it was up to 0.8 shows that the maximum of the world's accommodating capacity is being rapidly approached. If the U.S. consumption standard was followed across the globe, 4 and more earths would be needed to support 7 billion people; if everyone on the earth was willing to be vegetarian and left a paltry portion of food to the livestock and poultry, the 1.4 billion acres of arable land on the earth would suffice for the survival of around 10 billion people.

A report on the population development predicts that if the population keeps growing at the current rate, the world population will reach 14.4 billion by 2050; if the birth rate decreases to 2.1 percentage points or ever lower, the figure will be 8.9 billion by 2050; nowadays the mankind is actively taking various measures to curb the population growth and the world population will be around 9 to 10 billion by the end of this century. If soil erosion and underground water pumping are continued as they are, pollution of the rivers and lakes can't be effectively controlled and the mankind tends to over-consume, the mankind is bound to suffer shortage of food supply. Within the next less than 100 years, we must take good care of our living environment. Whether our offspring can survive and lead a secure and happy life depends on whether the mankind can make it through the survival bottleneck in the 21st century.

## 2. The Modern Human in Evolution

The paleontologists divide the homo sapiens into the early and late ones which appeared around 200 thousand years ago.

The early homo sapiens in a few species had small brains with their cerebral capacity being 1150ml only and used very simple tools. Though they were capable of capturing some animals, they were prone to be preyed on by other carnivorous animals. It is clear that early homo sapiens didn't pose a threat to the biodiversity, but underwent coevolution with the other plants and animals under the same environment.

Around 60 to 100 thousand years ago, the homo sapiens leapt into a brand new stage of evolution since they could make better tools with their cerebral capacity being up to 1150ml and thence they were taken as the late homo sapiens. With the expansion of their species and the use of improved tools, their hunting was much more efficient. The mankind's struggle against the other creatures and their damage to the biosphere thus started.

60 thousand years ago when Australia was uninhabited by mankind there were many colossal terrestrial animals including the flightless *Genyornis newtoni* weighing 80 to 100kgs, the *Macropus titan* as large as a rhinoceros and the unicorn tortoise with the size of an automobile. After the first batch of late homo sapiens migrated to Australia, those extraordinary colossal animals became extinct as a result of human hunting and killing.

The late homo sapiens living 10 thousand years ago are called the modern human. History records that the modern human inherit the nature of the late homosapiens and play the part of a killer in each and every corner of the world.

- 1500 years ago, there were no more than 100 colonists in New Zealand who turned out to kill 160 thousand *dinornis* within a very short time.
- The modern human first landed on Madagascar 1200 years ago. Soon afterwards, the animals with a weight of 10 kg and above were eliminated.
- It is aptly said that those from the late homo sapiens to the modern human tend to eat up the food chain from the palatable large-size herbivorous animals to the fierce carnivorous ones and down to the agile and small ones.

The above-mentioned three cases reflect that ever since 60 thousand years ago, the killing nature is evident in the late homo sapiens as well as the modern human. The Garden of Eden once seized by them tends to be reduced into a slaughterhouse.

Why should the modern human treat the nature they depend on in such a stupid and ruthless way? The depth of human nature is worth exploring. Such a nature is passed down from the Paleolithic period. For nearly 100 thousand years whether the late homo sapiens or the modern human they live in a closed circle of kinsmen and friends. Those working towards short-term goals may be better-off, enjoy a longer lifespan and bring up more offspring while those setting sight on long-term goals are endowed with unselfishness which stands chances of being passed down from generation to generation. But speaking from the current stage of human evolution, so far the time for the DNA modification and the related choice conditioned by the environment is too short, so it follows that it is still impossible for the valuable

qualities of cherishing long-term goals and being selfless to dominate among the human race. Hence the modern human still carry the same nature as their forefather homo sapiens to a great extent and remain a relatively unchanged species yet to be further evolutionized.

### 3. Seeking the Best Way Out

Over the past three decades, I leading the research team of Peking University made concentrated investigation into the survival strategies of three endangered animals unique in China and developed methods on protecting them as well as the bio-diversity in their habitats in light of their specific natural and historical conditions as well as the special characteristics of the human communities concerned so as to lift them out of survival predicament and restore them to normal life.

#### 3.1. *Forest Protection is Prerequisite for Panda Protection in Qinling Mountains*

The natural refuge of the pandas in the Qinling Mountains should be located through concentrated study and then the state stipulation should be in place to ban logging and allocate funds to properly transfer the lumbermen; the natural reserve should be established and expanded up to the point that the wilderness of the South Slope of the Qinling Mountains is restored; and necessary assistance should be extended to the locals to improve their living standard by relying upon themselves.

Since we entered the forest area under logging in the South Slope of the Qinling Mountains in 1984, we have been studying the complicated relation-ship among the environment, pandas and mankind.

We made two crucial findings in 1988:

1) The natural force of the South Slope in the middle stretch of the Qinling Mountains made the 1350m contour into a cross-section between the "Forest Biological System" and the "Mountain Agricultural Ecological System". The agricultural development in the mountainous region was restricted below the contour, thus the vast area above the contour became the natural refuge of dozens of wild animals including pandas.

2) Considering that the forest industry went through the cross-section and intruded into the natural refuge of the wild animals on one hand and the Changqing Forestry Bureau complied with the Forest Law of the state and maintained the sustainable use of the forest and ensured the employment of the lumbermen on the other, we put forward a proposal reminiscent of the Utopia, i. e., "Let the pandas and man share the environment in harmony". However, driven by economic benefits the Changqing Forestry Bureau had nearly shaved the Qinling Mountains by 1993 with very cruel means, wreaking so much destruction on the South Slope, which all but eliminated the future for the pandas and the hope of the local people. We must battle it out and whether we can succeed or not is up to how we do with the pristine forest in the main range of the Qinling Mountains.

In October 1993, we wrote to related state leaders requesting measures to be taken to address the ecological crisis in the Qinling Mountains. Days later, the then current Premier Zhu Rongji instructed, "Stop logging at once! The lumbermen should be transferred and a new natural reserve establish-ed." In May 1994, the Changqing Forestry Bureau stopped all logging; in 1995 the Changqing Natural Reserve was set up. I feel happily relieved that there is a prospect for some pandas to live a stable life ever since.

In the autumn of 1996 we concluded our 12-year-long research here. When I passed by Huayang Township nestling in the crossing between the mountainous farming area and the wilderness, I found the township once full of bustle and hustle had become deserted and the shops, inns, eateries, and post offices all shut down and my otherwise good mood was thus shrouded by anxiety and distress. Am I to blame?

In 2010 we have found welcome changes have taken place in the South Slope of the Qinling Mountains once shaved and ravaged and the natural habitats as well as the human community have been restored.

1) The forest system of the middle and up has been restored, which signifies that colossal animals including pandas, takins, golden monkeys and leopards getting used to the wilderness can rove freely in the natural refuge composed of themixed needle and broad-leaved forest and the needle-leaved forest.

2) The human community below the middle section is also in the process ofbeing restored. The farmers in the Huayang Township improved their livelihood by planting herbs, raising animals and developing ecological tourism, built new tile- roofed houses and support their kids to and through colleges.

3) The Changqing Natural Reserve is of ecological service since it provides a favorable natural environment for the neighboring human communities for free.

The researchers from Peking University continue to investigate into the potentials on building a habitat corridor among the panda habitats. By making the South Slope into a whole can the pandas and the forest system of the Qinling Mountains as well as the biodiversity there be effectively protected. As thus the wilderness there can be maintained for a long term and preserved as the natural heritage.

The most important thing I have gained in my 26-year-long research into the Qinling Mountains is that it is a common undertaking for the mankind to protect the nature. The enthusiasm and perseverance of a minority of people cannot do. It is necessary to integrate the wisdom and power contributed by various fields such as science, politics, economics, ethics and morals.

### *3.2. Wellbeing of the Locals Goes ahead of Protection of White-headed Langurs*

The key issue of the conservation biology research on protection of animals in the poverty-stricken Nongguan mountainous region is how to protect the biodiversity as far as possible while trying to improve the local people's living standard.

In order to find the nearly extinct species of the white-headed langurs, we came to the Nongguan mountainous region in the southwest of the Guangxi Zhuang Autonomous Region to study the intricate relationship among population, land and wild animals.

The natural environment of the arid place encircled by karst limestone hills suffers near devastating damage. In spring one can't see plants bloom and the field is fraught with voles, but there is no sign of snake and frog and the white-headed langurs are on the verge of extinction. Besides, we found that the land had been reclaimed to the maximum to the extent that the farmers' logging went too far above the biomass of plants. Aside from the small piece of life-saving land, people own nothing. The difficulty brought by the population increase compounded by harsh life subjects the locals to the vicious circle of poverty, reclaiming and poaching.

Under such conditions it is a must to solve the local farmers' problems of food and clothing, gradually improve their living standard and restore biodiversity under the support of the government so as to protect the natural environment of the Nongguan mountainous region. Poverty elimination in the Nongguan mountainous region lies in firstly changing the farming species under the local government's support, i. e., planting sugar cane instead of the rice and grains to increase the farmers' income; another fairly significant move is to help farmers build the biogas digester so that they no longer go logging in the mountains. Ever since 2005 the plants enjoy the life cycle of blooming, seedling and ripening, which gives rise to the lush and pleasing scene in the mountainous region and the natural biological environment is restored in a timely fashion. With the trees flourishing, there are more birds, snakes and carnivorous animals and thus the number of pests and mice is decreased. The farmers refrain from using pesticides or apply pesticides sparingly, which not only contributes to the clean environment, but also lowers the farming cost. With the time and energy for logging and hunting put to farming, the farmers enjoy bumper harvest. Meanwhile, under the support of the domestic and overseas friends and the non-official organizations our research team helped the rural communities build hospitals, primary schools and drinking water projects and other relatively smaller projects in the new socialist countryside construction to help improve the life of the local villagers. Through 14 years of endeavor, the Nongguan mountainous region regains vim and vitality: The biodiversity in the North tropical monsoon forest is being restored;

the number of the white-headed langurs rose from 96 in 1996 to 660-plus in 2009 ; the per capita income of the farmers in this region rose from 300-400 yuan in 1996 to 1500-1600 yuan in 2009; at present nearly 30-40% percent of the farmers use their savings to build reinforced concrete houses to replace the sod abode with thatched roofs left behind by their elder generations. An article carried in New York Times depicts the scene that "a cluster of villages are rescued and a group of leaf monkey protected". By the way, it is worth mention that our basic research comes to fruition at an unexpected moment thanks to the enthusiastic help and support of the local government and people.

The case that "Vigor and vitality is restored to Nongguan mountainous region" sheds light on the survival mode for the 25 million people in 11 ethnic groups living in the karst mountainous region covering 42% of the Guangxi Zhuang Autonomous Region.

### *3.3. Try to Realize Win-win in Economic Development and Environment Protection*

It is the sincere cooperation among the government, scientists and enterprises that counts to the protection of the Chinese white dolphins and the Sanniang Bay shallow sea ecological system on which they depend on.

The Chinese white dolphins once dominated the best part of the shallow sea in the southeast to China. But in the past 30-odd years, they are listed as the critically endangered species by the International Union for Conservation of Nature (IUCN). An overview of the biological information about the species reveals that the Chinese while dolphins in the Sanniang Bay of Qinzhou, Guangxi Zhuang Autonomous Region, is the last healthy local population standing good hope of surviving and thriving, but still they are in face of cruel reality. What falls into our research is the complicated relationship among the sea, the dolphins and the human society.

Three interconnected factors determine the destiny of the Chinese white dolphins and the biodiversity embodied by it: 1) A healthy natural ecological system of the Dafeng River and the Sanniang Bay is prerequisite for the health of the Chinese white dolphins in this sea area. 2) The economic development in the northern bay brings pressure to the environment and the Chinese white dolphins in this sea area as well. 3) There must be a ceiling for the economic construction in the northern bay so that the protection of the natural environment can be ensured. Our continued research is focused on the Chinese white dolphins in the sea area of the Qinzhou city while our protection work is started out of ethnical considerations. Our research indicates that the Chinese white dolphins are concentrated in the Sanniang Bay of Qinzhou which boasts rich varieties of creatures even today and thus is well worthy of protection, but at the same time is in the midst of various ongoing and potential crises. As a new economic development zone, Qinzhou sees the industries, ports, raising business and tourism in the frenzy of construction. In 2004 the area around the Sanniang Bay was also incorporated into the industrial development zone, signifying that this bay would be reduced into a dustbin lumped with industrial waste and there was no future to speak of for the Chinese white dolphins. We suggest to the Qinzhou government that it is advisable to modify the blueprint of economic development with a view of the long-term interests.

In 2005 the government modified the overall layout planning for industrial development, moving the industrial zone originally set in the eastern coast by the shallow sea and likely to jeopardize the biodiversity of the Chaojian Belt in the Sanniang Bay to the western coast by the deep sea.

In early 2009 we reported to Zhang Xiaoqin, party secretary of Qinzhou city that the shipyard if to be built by the Dafeng River in light of the planning may change the ecological order existing as of the time immortal and impose negative influence upon the Chinese white dolphins and the sea area. In the same year Secretary Zhang told me the shipyard that could have drawn an investment of 3.8 billion yuan was cancelled.

An overseas-funded paper pulp plant also accepted our suggestion, taking the initiative to realize nearly zero emission by purchasing the most advanced 300 million yuan-worth sewage treatment equipment to

reduce its sewage discharge already acceptable in accordance with the standard stipulated by the state environment evaluation committee.

The above facts indicate wise ethical choice may help unify recognition that the thing of paramount importance is to consider whether one should rather than could do something or not in addressing problems by the concerted efforts of the “government, scientific teams and social enterprises”. We are full of hope for the economic development and protection of the natural environment in Qinzhou. Only when the new Qinzhou developed under the culture of sustainable development embraces the following three things, i. e., robust economic growth, brisk production of the fishing industry and the Chinese white dolphins capable of stimulating people's wisdom and inspiration roaming in the azure sea, can the northern bay enjoy security and prosperity and can our offspring lead a happy life.

#### **4. In Conclusion**

Over the past 30 years, we have committed ourselves to the nature protection campaign under the common concern of all human beings, which awards us the greatest enlightenment that “the mankind can never afford to be alone in the world, but co-exist with varieties of other creatures.”

Our outlook upon the world has been broadened from our own interests to the interests of the masses, from our nation to the mankind, and from our generation to the offspring.

We do things more actively since it has sunk in our minds that it is impossible to accomplish anything alone. Only through concerted efforts can the ideal of serving the public can be realized.

All in all, the most significant realization is that the modern human are rapidly awakening to the truth that it is a realistic goal for the mankind by virtue of wise ethnic choice and incessant progress of scientific technology to make a blueprint of sustainable development and prudently get themselves as well as other species out of the survival bottleneck within the limited period of time in the 21st century and protect the coexistence of a majority of creatures on the earth and strive for a better future for themselves.